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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,296	04/23/2001	Yoshinori Aoyagi	122638/00	2997

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EXAMINER

NGUYEN, HOAN C

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,296

Applicant(s)

AOYAGI ET AL.

Examiner

HOAN C. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's arguments with respect to Amended claims 1-10 and New claims 11-13 have been considered but are moot in view of the new ground(s) of rejection.

Therefore, this is **Final action**.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features

- "each said switching element is a thin film transistor and said second substrate is formed with a color filter" in claims 3 and 11;
- "the first substrate is provided with a common electrode arranged in parallel to said pixel electrodes to construct an active matrix substrate of In-Plane Switching system" in claim 5;
- "a drawing direction" in claim 11;

wherein the first substrate having a first irregular surface including line-shaped protrusions extending in one direction; the second substrate having a second irregular surface including line-shaped protrusions extending perpendicularly to said one direction in claim 1. **Figures 7A-B show LCD with two substrates, which do not have irregular surfaces as claims 1 and 11 recited.**

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must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 11-13 are objected to because of the following informalities:

- Applicant needs to clarify what is “a drawing direction” in claim 11. Should “a drawing direction” be along the line-shaped protrusions?
- the feature “a distance between positions at which pressure differences between said first rectangular substrate and said second rectangular substrate are largest is increased” in claims 12-13 is unclear that
 - what is a distance (gap between substrates)?
 - what are positions (positions of substrates)?
 - why is this distance increased when pressure between first and second substrates are largest? Please provide DRAWING to demonstrate this process.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knop et al. (US4251137).

Knop et al. teach (Fig. 4, col. 3 line 59 to col. 4 line 16) liquid crystal display device comprising

- the first substrate (grading substrate 402) having a first irregular surface including line-shaped protrusions 404 extending in one direction;
- a second substrate 400 arranged in an opposing relation to said first substrate, said second substrate having a second irregular surface including line-shaped protrusions 406 extending perpendicularly to said one direction;
- liquid crystal disposed between said first substrate and second substrate.

Wherein

- line-shaped protrusions are formed due to a direction dependency of a thickness of a raw glass substrate.
- electrodes on surfaces of the first and second substrates for applying electric field.

Knop et al. fail to disclose first substrate comprising TFT as switching element and second substrate comprising color filter;

It is conventional art that LCD comprising first substrate comprising TFT as switching element for increasing quality image display and second substrate comprising color filter for realizing color display.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify liquid crystal display device as Knop disclosed with first substrate comprising TFT as switching element for increasing quality image display and second substrate comprising color filter for realizing color display.

4. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knop et al. (US4251137) as applied to claim 1, in view of Ohe et al. (US6295110B1).

Ohe et al teach liquid crystal display device, wherein the first substrate is provided with a common electrode arranged in parallel to said pixel electrodes to construct an active matrix substrate of In-Plane Switching system for aligning liquid crystal molecules parallel to surface of pixel electrodes or alignment layers.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify liquid crystal display device as Knop disclosed with first substrate provided with a common electrode arranged in parallel to said pixel electrodes to construct an active matrix substrate of In-Plane Switching

system for aligning liquid crystal molecules parallel to surface of pixel electrodes or alignment layers with different domains due to irregular surface of substrates, thus achieving wide view angle.

Response to Arguments

Applicant's arguments filed on 14 November 2002 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

Knop fails to disclose line-shaped protrusions are formed due to a direction dependency of a thickness of a raw glass substrate.

Examiner's responses to Applicants' ONLY arguments are follows:

Knop teaches line-shaped protrusions 404/406 are formed due to a direction dependency of a thickness of a raw glass substrate.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

chn
December 17, 2002


ROBERT H. KIM
EXAMINER
DEC 18 2002